CLAIMS

1. A wellbore effluent potentiometric sensor comprising at least one reference electrode;
at least one measuring electrode; and
at least one connector between said reference electrode and said measuring electrode, wherein said electrodes and connector form said potentiometric sensor exposed in operation to said wellbore effluent via an opening or sample channel and wherein said connector provides a continuous conductive path between said reference and said measuring electrode in the presence of hydrocarbon containing effluent.

2. A sensor according to claim 1 wherein the connector comprises a porous material.

3. A sensor according to claim 2 wherein the connector comprise an aqueous solution or gel.

4. A sensor according to claim 3 further comprising a discharge element adapted to release an aqueous solution or gel into the connector.

5. A sensor according to claim 4 wherein the discharge element is self-discharging in the wellbore.

6. A sensor according to claim 4 wherein the discharge element is controlled by an external control unit.

7. A downhole tool for measuring characteristic parameter of wellbore effluent comprising a potentiometric sensor having at least one reference electrode;
at least one measuring electrode; and
at least one connector between said reference electrode and said measuring electrode, wherein said electrodes and connector form said potentiometric sensor exposed in operation to said wellbore effluent via an opening or sample channel and

wherein said connector provides a continuous conductive path between said reference electrode and said measuring electrode in the presence of hydrocarbon containing effluent.

8. A downhole tool according to claim 8 wherein the connector comprises a porous material.

9. A downhole tool according to claim 7 wherein the connector comprises an aqueous solution or gel.

10. A downhole tool according to claim 9 further comprising a discharge element adapted to release an aqueous solution or gel into the connector.

11. A downhole tool according to claim 10 wherein the discharge element is self discharging in the wellbore.

12. A downhole tool according to claim 11 wherein the discharge element is controlled by an external control unit.